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ABSTRACT

Textbooks used for the first time in a large introductory, and in an advanced, psychology course were systematically examined, using different methods for each text, to measure the amount of individual student underlining. This amount was then correlated, in each course, to the students' performance, with each student's general academic ability being considered as a control variable in the introductory course. Results indicate: (1) a high degree of reliability in measuring the amount of underlining was obtained, using a small number of randomly related pages of a text; (2) underlining was used more frequently by students of lower academic ability; and (3) it was not clear that underlining facilitated achievement. It is concluded that underlining would not serve too well as an index of identification of relevant content due to the large proportion of students (about 50%) who did not underline to any measurable extent in their text. (Author/TL)

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Research Report

TEXT BOOK UNDERLINING AS AN INDEX OF STUDENT IDENTIFICATION OF RELEVANT INSTRUCTIONAL CONTENT

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Cooperative Research

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FINAL REPORT

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SUMMARY

Some characteristics of student underlining of assigned text book materials were examined to assess textbook underlining as a possible index of student identification of relevant instructional content. How well student's identify the most relevant content among the total instructional input they receive would seem to be a fairly significant factor affecting their level of achievement in a given course. It was felt that textbook underlining might provide a fairly direct index of this factor.

Textbooks used for the first time in a large introductory and in an advanced psychology course were systematically examined using different methods for each text to measure the amount of individual student underlining. An indication of the reliability of each method was obtained. The amount of text underlining was related in each course to the students' performance with the student's general academic ability being considered as a control variable in the introductory course.

The results indicated that a highly reliable measure of amount of underlining could be obtained from observations of underlining on a relatively small member of randomly related pages of a text. There was evidence that underlining was used more frequently by students of lower than those of higher academic ability. The evidence was not clear that underlining facilitated achievement although it was more in this direction than otherwise for those in introductory course.

In general it appeared that underlining would not serve too well as an index of identification of relevant content due to the large proportion of students (approximately 50 percent in each course) who did not underline to any measurable extent in their text.

INTRODUCTION

This project was carried out to obtain some preliminary data concerning the methods and approaches that might be used to investigate questions pertaining to student identification of relevant instructional content.

Among the student connected factors likely to affect achievement in college level courses is the adequacy with which the student identifies the most relevant instructional content among the total instructional input available in lecture and assigned textbook materials.

Variation in student course achievement would seem necessarily to relate quite highly to how well the central points, items of knowledge and information being given primary emphasis in the measures of achievement were identified as such within the instructional materials by the student. This factor, the identification of relevant content (IRC), would seem to operate in addition to how well subject matter content was comprehended or understood since the latter will effect performance only if it occurs for the most relevant content.

Several recent studies have provided evidence indicating that IRC is a factor related to acquisition of information contained in textual and instructional materials. Rothkopf and Bisbicos (6), Frase (3), and Bruning (1) have shown that the frequency and content of test items following sections of textual material reliably affects the type and amount of material learned. This presumably is due to differential attention to certain of the material as a result of the specific content focus of the test items. Other studies reviewed by Gagne (4) indicate that providing explicit IRC with instructional materials rather than relying on the learner's IRC sometimes facilitates and sometimes retards acquisition of the specified material. Carrol (2) has commented generally on the limited evidence and research concerning the nature of the information processing skills and strategies employed in the acquisition of knowledge from written materials.

Although a number of instructional conditions no doubt affect IRC, this factor is probably of more consequence in general survey courses having large enrollments, few examinations and little instructor-student contact which can provide the best basis for successful IRC.

Determination of the extent and variation in successful IRC among students and the conditions affecting it should contribute to improvement in college level instruction and also provide a

better means of determining the cognitive factors involved in the acquisition of knowledge at this level.

One of the more apparent overt indices of IRC behavior occurring in conjunction with college level instruction would seem to be that provided by student underlining or high-lighting of textbook materials. Because of the textbook lending policies of the Wisconsin State Universities, which provide for the lending and return of texts and identification of the user, it appeared feasible to examine some characteristics of textbook underlining to see whether they might provide a basis for subsequent investigation of IRC in learning at the college level. The specific purpose of the project was then to make some assessment of the extent and nature of textbook underlining as a possible index of that IRC activity most likely to be directly reflected in actual course achievement.

The objectives of the project were to determine:

1. The amount of underlining occurring in an introductory survey course texts and in advanced upper division course texts.

2. The reliability of several methods used to quantify the amount of underlining that occurs.

3. Whether there was any general relationship between amount of underlining and students' individual course achievement.

Because of the extensive labor that might be required to quantify the amount and other characteristics of textbook underlining, several alternate methods were used. One of these was a method which was expected to lack precision but would permit in a limited amount of time consideration of a large number of texts and thereby give a better picture of the possible variations in underlining practices. The other represented a more precise method appropriate for a small number of texts in which there was likely to be more extensive underlining.

It was expected that a positive relationship should exist between amount of underlining and level of course achievement. Underlining is an overt indication of some amount of selective processing of textbook content and thereby would suggest greater attention to and involvement with the material - a condition essential to learning. Amount of underlining, as such, however, would not indicate that the most relevant content was being identified in this way.

METHOD

To investigate these questions, observations were made concerning the underlining practices followed by students in textbooks used in an introductory and an advanced psychology course, the texts having been

borrowed from and returned to the textbook library.

For each student having a text included in the observations, performance over the semester in the respective course was determined. For the majority of students in the introductory course, college entrance test scores were also obtained as an estimate of their general academic ability.

Introductory Psychology course: Judgments were made concerning the amount and nature of underlining (or highlighting) that appeared in an available sample of 247 textbooks which had been returned to the textbook library after use for one semester by individual students in each of four sections of Introductory (General) Psychology. The judgments were made by a student assistant who was instructed to systematically page through each text and to estimate the proportion of pages for which there was respectively a light, moderate and heavy amount of underlining. A reference point for this judgment was provided by sample pages of text which had been underlined to indicate the upper limits of the light and moderate judgment categories, respectively. The lower limit for the "light underlining" category was at least one word underlined. This procedure also provided an estimate of the proportion of pages having no underlining. The judge was further instructed to attend to the style of underlining employed; that is, whether the student had mainly underlined words, phrases, sentences or paragraphs or combinations of these in those texts in which underlining was estimated to occur on 10 percent or more of the pages. The judgments and observations for each text as it was reviewed were recorded on a standard form.

To obtain some indication of the reliability of the estimation procedure for indexing the amount of underlining, a second student assistant made the same judgments independently for a random subsample of the same textbooks. The degree of correspondence between the two independent judgments was then determined.

In each of the four sections, the student's total score on all tests administered during the semester was used as a measure of academic performance in that course. In all instances these were objective tests prepared by the class instructor. Since among the several introductory course sections, the number, content, and length, etc. of the tests varied somewhat, it was not possible to equate these performance measures across sections. Consequently, the relations with average test performance was determined separately for each of the introductory sections.

To determine the relations between amount of underlining and course performance independent of (that is, controlling for) general academic ability, the composite score obtained on the ACT (American College Test), which is a required entrance test, was gathered for as many students in the sample as possible from the Student Record Center.

Additional Observations: In a separate subsequent Introductory Psychology class, a one-page "study habits" questionnaire was administered which among other things, inquired about the students' use of textbook underlining in the course. The relevance of the questionnaire inquiry to this project was that reported amounts of underlining could then be compared in a general way to the underlining that had actually been observed to determine how valid the more readily obtained self-report information might be.

Advanced Psychology Course: For a smaller, upper division psychology class (Psychological Tests and Measurements) using a new text for the first time, the book used by each member was examined with respect to the underlining practices of the student. In each chapter that had been assigned during the semester two 2-3 page sections were selected from among those having predominantly factual content which showed within the section variation with respect to degree of specificity. These sections were those that appeared to contain material which students would be likely to identify as having more or less specific achievement relevant items of knowledge or information.

An index of amount of underlining was then obtained in the following way for each text having at least some underlining. In each of the sections selected the number of lines of print having one or more words underlined were counted along with the total number of lines of print in the section. For each student's text the total number and proportion of total possible lines that could be underlined was determined.

A separate index of the amount of individual student underlining was also obtained by applying the same "line-count" procedure to eleven additional randomly selected pages in the text. The latter pages were selected from among those in the alternate chapters that had been assigned for the course. Again for each student the total number of lines with underlining was determined. This index was obtained to determine the adequacy of a random as opposed to a selected page index of amount of underlining.

The reliability of the index of the amount of underlining and for the text in this course was provided by correlating the total number of lines obtained for each individual for separate randomly designated halves of the textbook sections in which these values were obtained. This procedure is analogous to the split-halves reliability method used to assess the internal consistency among items in achievement tests. To use this method however, texts containing no underlining at all could not be included since this characteristic necessarily re-

quired maximum consistency in this respect through the whole text, and would have unrealistically inflated the reliability estimate.

As in the introductory course, achievement was measured by the students' performance through the semester on instructor-made objective tests. This achievement criterion did not include course required creative applications such as term papers or test evaluations.

RESULTS

Introductory Psychology Course: Table I shows the number and percent of students at each estimated level of proportion of pages underlined a slight amount or more for students in separate and combined sections of Introductory Psychology. It is evident that in the introductory course students did not utilize text underlining to any great extent. Slightly more than one-half of the sample of texts did not reveal any underlining at all and only about 20 percent were estimated to have underlined material on more than 15 percent of the pages. It does appear that there is a certain amount of variation in this respect between the separate sections of this course. To determine whether the section differences represented chance variation, a Chi-square test was applied to the frequencies for the none, 1-15 and 16 plus, percent underlined categories. A Chi-square value of 13.4, with 6 d.f. was obtained which is significant at the .05 level, indicating that the section differences may reflect other than chance factors.

Table II shows the number of texts, among those for which there was some underlining, having each designated proportion of slight, moderate and heavy amounts of underlining.

It appears that slight and moderate amounts of underlining occurred for about the same proportion of students but that moderate underlining occurred on a greater proportion of pages than did slight underlining. The latter tendency also exists for heavy relative to slight underlining. In the texts in which slight underlining appears it does so on a smaller proportion of pages than does moderate or heavy underlining.

With respect to the style of underlining used by those estimated to have 10 percent or more of the pages underlined, only 20 percent were found to have used either words, phrases, sentences or paragraphs predominantly. For the remainder some combination of these was most evident with words, phrases and sentences being most frequent combination, accounting for 21 percent of the total. Table III shows the frequency and percent occurrence among students of each of these four

Table1

Number and percent of students at each level of estimated perdent of pages underlined for each section in introductory psychology.

	Estimated percent underlined					
Section	None	1 - 5	6 - 15	16 - 25	26+	Total
1 Freq.	44	9	6	8	4	71
%	62	13	8	11	6	100
2 Freq.	38	11	12	6	7	74
%	52	15	16	8	9	100
3 Freq.	27	9	11	8	7	62
%	43	15	18	13	11	100
4 Freq.	22	2	3	7	6	40
%	55	5	8	17	15	100
All Sections Freq.	131	31	32	29	24	247
%	53	12	13	12	10	100

Table 2

Numbers of students at each estimated level of occurrence of different amounts of underlining for all introductory psychology sections combined

	Estimated percent of pages						
Degree of underlining	1 - 5	6 - 10	11 - 15	16 - 20	20	Total freq.	% of students *
slight	52	16	12	3	1	84	71
moderate	30	28	9	8	11	86	72
heavy	17	16	8	6	8	55	47

*N = 116 students

Table 3

Number and proportion of students exhibiting each type of underlining in Introductory Psychology texts.

Type	Number	% of total*
words	27	44
phrases	35	57
sentences	47	77
paragraphs	16	26

*N = 61

types as they occurred either in combination or separately. The greatest proportion of students underlined on the basis of whole sentences.

Table IV provides a cross-tabulation of the estimated proportions of textbook pages with underlining made by each of the two judges for the subset of 111 texts for which both judgments were made. An index of the degree of agreement between judgments was obtained using the γ statistic suggested by Hays (5) which gives the exact probability of two randomly drawn pairs of observations having the same relative order for both judgments. A value of .91 was obtained for γ when these classification categories were used. For these categories, there was agreement on 63 percent of the cases. It is evident that the greatest amount of agreement occurred for texts that apparently were not underlined at all and that there was no a very high degree of agreement using this method on texts for which some amount of underlining had been done. Because of the nature of the distribution of values for the percent-of-pages underlined as shown above, i.e., a large proportion of students showing no underlining and a non-normal distribution across the range of percentage values, this index was treated in this analysis as an ordered categorical variable rather than a continuous variable. Students in each introductory section was cross-classified with respect to ACT score level (3 levels) and estimated percent-of-pages underlined, i.e., none, 1-5 percent, and 6 percent or greater - as shown in Table V. Within each of the cross classification cells, the students' average class test score was determined. The weighted marginal means for the ACT and underlining percent categories and the overall (weighted) means were also determined and are shown with the cell means in Table VI. Because of the larger number of texts for which this judgment was obtained, the first judges' estimates of amount of underlining (rather than the second judges') were used for the analysis shown in Tables V and VI. A similar analysis was made using the underlining estimates given by the second judge and showed quite similar trends.

Examination of Table V shows a tendency in all sections, except section 2 for a larger proportion of lower than of higher academic ability students to engage in some amount of underlining. There does not appear to be any differential trend in this respect in Section 2. Combining all sections and comparing frequencies for none (zero percent) with some underlining (i.e., 1 percent or greater) for the three ACT levels yields a χ^2 value of 12.26 (with 2 d.f.) which is significant at the .005 probability level.

Examination of the cell and marginal means shown in Table BI does not reveal a strongly consistent tendency for those who had engaged in more underlining to achieve at a higher level than those who had not. At the same time, the trend in general is more in this direction (i.e., toward a better performance for those showing more underlining) than in the opposite direction. This tendency is most evident in Section 2.

Table 4

Number of texts at each level of percent of pages underlined as estimated by each judge.

Second Judgement

First Judgement: Percent pages	none	1 - 5	6 - 15	16+	Total
none	41	11	1	0	53
1 - 5	5	13	0	0	18
1 - 15	0	10	8	0	18
16+	0	8	7	7	22
Total	46	42	16	7	111

TABLE V

Number of students classified by ACT score level and estimated percent-of-text-underlined for each Introductory Psychology section.

1	21	5	2	8	15	
	21-22	4	4	2	10	
	23+	9	2	3	14	
	total	18	8	13	39	
2	21	9	3	7	19	
	21-22	5	3	4	12	
	23+	14	5	10	29	
	total	28	11	21	60	
3	21	6	4	8	18	
	21-22	2	0	9	11	
	23+	12	2	5	19	
	total	20	6	22	48	
4	21	3	1	8	12	
	21-22	5	1	4	10	
	23+	10	0	1	11	
	total	18	2	13	33	
All Sect.	21	23	10	31	64	
	21-22	16	8	19	43	
	23+	45	9	19	73	
	total	84	27	69	180	

TABLE VI

Average total test scores obtained by students classified by ACT score level and estimated percent-of-text-underlined within each Introductory Psychology section.

1	21	155.0	153.5	145.3	149.6
	21-22	143.3	133.8	132.5	137.3
	23+	172.4	182.0	174.0	174.1
	total	161.1	150.8	142.2	155.3
2	21	136.1	149.0	145.4	141.6
	21-22	144.6	152.7	158.8	151.3
	23+	155.1	161.0	161.4	158.3
	total	147.1	155.5	155.6	151.6
3	21	161.5	158.3	165.3	162.4
	21-22	177.0	-	173.0	173.7
	23+	175.3	203.0	184.0	180.5
	total	171.4	173.2	172.7	172.2
4	21	140.0	112.0	151.0	145.0
	21-22	150.2	122.0	146.5	145.9
	23+	151.0	-	171.0	152.8
	total	148.9	117.0	151.2	147.9

Because of the small frequencies in the cells and the necessity of treating each section separately, there is no statistical test which could be appropriately applied to this data to determine the statistical reliability of any overall trends or differences with respect to the measure of course performance.

Advanced Psychology Course The distribution of amount of underlining in the advanced course text in terms of the percent-of-lines on selected pages is shown on the lower portion of Table VII. For one-half of the class members there was no underlining on any of the pages, while slightly more than one-third of the class showed underlined words, etc., on 6 percent or more of the lines in the selected sections.

Considering the 9 randomly selected pages, 9 (36%) of the 26 class members had done some underlining on 30 percent or more of the pages. It appears that when underlining occurred, it occurred much more extensively in the advanced than in the introductory course texts.

For the advanced psychology course text, each of the two sections selected in each of the 16 chapters were randomly assigned to one of two categories. The number of lines containing underlining in all sections in each of the two categories were determined for each text and these two values correlated across texts for the 13 students who did some underlining. A Spearman Rank-order correlation coefficient was computed because of the small N and non-normality of the distribution. The value obtained for the coefficient was .95. A similar procedure applied to values for this variable obtained in the same way for the randomly selected pages yielded a rank-order coefficient of .83. The rank-order correlation between the values for amount of underlining in the selected sections and the random pages was .93 which indicates that the value obtained from 9 pages gives the same relative ordering as that obtained from more than 35 pages.

It is evident that the index of underlining obtained by counting the number of lines of print with at least minimal underlining is a fairly consistent relative index of amount of underlining. It should be noted, however, that the split-halves technique used here was carried out so that sections or pages at all points through the text were represented equally often in both of the halves being correlated. This was done to minimize the possibility that a student's shift in underlining practices from the beginning to the end of the text would reduce the magnitude of the coefficient, i.e., to estimate the reliability of the overall index.

Table 7

Classification of advanced psychology class students with respect to percent of lines in selected text sections containing underlining and overall class test performance.

Class test performance	Percent of lines: None	1 - 5	6 - 10	10 - 20	20 - 30	Total	%
120 - 145	2	3	2	0	1	8	31
146 - 150	4	1	1	2	0	8	31
161 - 180	7	0	2	0	1	10	38
Total	13	4	5	2	2	26	100
%	50	15	19	8	8	100	

To determine how consistent students were in their underlining practices through the whole text, rank-order correlations were also obtained between the amount of underlining in successive thirds of the selected sections. The coefficients obtained for the underlining frequency between sections in the first and second thirds of the text, the second and third thirds and the first and third thirds, respectively, .36, .34, and .64. It appears that there is some shift in the relative magnitude of the values obtained for this index as the student moves through the book and the course and that the amount of underlining represented by this index tends to be more stable near the end than the beginning of the text (and course).

To determine if there was any correspondence between amount of underlining and course achievement, students were cross classified with respect to category levels of each of these variables. These results are shown in Table VII. From inspection of the table, it is evident that if anything there is a tendency for those who performed best to be less likely to have done any underlining. Those who did the most underlining appeared equally frequently at all three performance levels.

Additional Observations: On a questionnaire administered to students in a subsequent introductory course, better than 70 percent indicated that they had underlined material in their texts at least "occasionally". This is a significantly greater proportion than were found to have underlined by actually checking texts of previous classes.

CONCLUSIONS AND RECOMMENDATIONS

One of the more apparent observations concerning underlining as an index of successful student behavior is that only about 50 percent of the students in either the introductory or advanced courses were found to engage in textbook underlining. At the same time, however, a much larger proportion of students reported, when asked, that they did in fact do some textbook underlining. The latter observation indicates that questionnaire indices concerning this means of IRC could at best provide a relative, but neither an absolute nor a very precise measure of the amount of or other characteristics of underlining, nor one likely to have very high validity.

Although the same proportion of students exhibited no underlining in the introductory as the advanced course, those that did underline in the advanced course did so to a much greater extent than those in the introductory course. It is possible that students who adopt this practice tend to use it more extensively as their educational career progresses.

From the data gathered for the advanced psychology class, the indices of the amount of underlining (percent of text lines and percent of pages containing some underlining) were quite reliable with respect to indicating the student's relative behavior in this respect over the entire course (or text). At the same time, the correlations between successive thirds of the assigned text material show that there may be some variation in underlining practices as the student goes through the text. The practices followed tend to be more stable nearer the end than the beginning of the semester. The latter observation raises some question as to the significance of the greater reliability when the value for the text as a whole is considered.

In both the introductory and advanced courses, it was quite apparent from the successful performance of some of those who did not underline that this practice is not the only procedure for IRC. In fact, there was a tendency for students having lower general academic proficiency to engage in underlining more than those with higher general proficiency. This observation is consistent with those showing low negative relations between academic ability and time spent studying which seems to reflect the greater effort required of those having less ability. However, when controlling for general academic ability, the data did not consistently show that underlining contributed to better achievement although the results tended more in this direction than otherwise. The latter tendency, however, may reflect the effects of motivational or effort factors as much as any direct facilitating effects of underlining, as such.

In general, it appears that actual textbook underlining as a means of indexing student IRC is quite limited. This is primarily because of the large proportion of students who do not employ underlining as a means of IRC. Results further suggest that underlining is not used to the same extent by students of different academic proficiency levels and that motivational factors may also be involved in relations between underlining and performance in actual courses.

All in all, it would seem that to the investigator of student IRC as a factor in knowledge acquisition might better be conducted under more controlled conditions using strictly experimental rather than natural observation or correlational methods.

At the same time given the moderately high consistency of underlining occurrence textbook observations might be a fairly good means of determining the qualitative variations that exist for this means of IRC.

R E F E R E N C E S

1. Bruning, R. H. The effects of review and test-like events within the learning of prose materials, Journal of Educational Psychology, 1968, 59, 16-19.

2. Carroll, J. C. On learning from being told, Educational Psychologist, 1968, 5, No. 2.

3. Frase, L. T. Effect of question location, pacing, and mode upon retention of prose material, Journal of Educational Psychology, 1968, 59, 244-49.

4. Gagne, R. M. and Rohwer, W. D. Jr. Instructional Psychology, Annual Review of Psychology, 1969, 20, 381-418.

5. Hays, W. L. Statistics for Psychologists, Holt, Rinehart and winston, New York, 1963.

6. Rothkopf, E. Z. and Bisticos, E. E. Selective facilitative effect of interspersed questions on learning from written material, Journal of Educational Psychology, 1967, 58, 58-61.